Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in this application.

Listing of Claims:

1. (Currently Amended) A method of inducing a dopaminergic neuronal fate in a neural stem cell or neural progenitor cell, the method comprising:
expressing Nurr1 above basal levels within the cell, and
contacting the cell with one or more factors secreted ~~obtainable~~ from a Type 1 astrocyte of the ventral mesencephalon, whereby dopaminergic neurons are produced.

2. (Original) A method according to claim 1 comprising contacting the cell with FGF8.

3. (Original) A method according to claim 1 comprising transforming a neural stem cell or neural progenitor cell with Nurr1.

4. (Previously Presented) A method according to claim 1 comprising co-culturing the neural stem cell or neural progenitor cell with a Type 1 astrocyte of the ventral mesencephalon.

5. (Original) A method according to claim 4 wherein the Type 1 astrocyte is immortalized or is of an astrocyte cell line.

6. (Previously Presented) A method according to claim 1 wherein said cell is mitotic when it is contacted with said one or more factors.

7. (Previously Presented) A method according to claim 1 wherein said cell is additionally contacted with one or more agents selected from the group consisting of: basic fibroblast growth factor (bFGF), epidermal growth factor (EGF), an activator of the retinoid X receptor (RXR), and 9-cis retinol.

8. (Previously Presented) A method according to claim 1 wherein said cell is additionally contacted with a member of the FGF family of growth factors.

9. (Original) A method according to claim 8 wherein said cell is contacted with bFGF or EGF, and SR11237.

10. (Currently Amended) A method according to claim 1 wherein the neural stem cell or neural progenitor cell is pretreated with bFGF and/or EGF prior to contacting the cell with one or more factors secreted ~~obtainable~~ from a Type 1 astrocyte of the ventral mesencephalon.

11. (Previously Presented) A method according to claim 1 further comprising formulating a dopaminergic neuron produced by the method into a composition comprising one or more additional components.

12. (Original) A method according to claim 11 wherein the composition comprises a pharmaceutically acceptable excipient.

13. (Withdrawn) A method according to claim 12 further comprising administering the composition to an individual.

14. (Withdrawn) A method according to claim 13 wherein the dopaminergic neuron is implanted into the brain of the individual.

15. (Withdrawn) A method according to claim 14 wherein the individual has Parkinson's disease.

16-18. (Canceled)

19. (Previously Presented) A dopaminergic neuron produced in accordance with claim 1.

20. (Original) A composition comprising a dopaminergic neuron according to claim 19.

21. (Original) A composition according to claim 20 comprising one or more additional components.

22. (Canceled)

23. (Withdrawn) A method according to claim 1 further comprising:
(i) treating a dopaminergic neuron with a toxin for said dopaminergic neuron;
(ii) separating the dopaminergic neuron from the toxin;
(iii) bringing the treated dopaminergic neuron into contact with a test agent or test agents;
(iv) determining the ability of the dopaminergic neuron to recover from the toxin;
(v) comparing said ability of the dopaminergic neuron to recover from the toxin with the ability of a dopaminergic neuron to recover from the toxin in the absence of contact with the test agent(s).

24. (Withdrawn) A method according to claim 1 further comprising:

(i) treating a dopaminergic neuron with a toxin for the dopaminergic neuron in the presence of a test agent or test agents;
(ii) determining the ability of the dopaminergic neuron to tolerate the toxin;
(iii) comparing said ability of the dopaminergic neuron to tolerate the toxin with the ability of a dopaminergic neuron to tolerate the toxin in the absence of contact with the test agent(s).

25. (Withdrawn) A method according to claim 23 or claim 24 further comprising formulating an agent which improves ability of a dopaminergic neuron to recover from or tolerate a said toxin into a composition comprising one or more additional components.

26. (Withdrawn) A method according to claim 25 wherein said composition comprises a pharmaceutically acceptable excipient.

27. (Withdrawn) A method according to claim 26 further comprising administering said composition to an individual.

28. (Withdrawn) A method according to claim 27 wherein the individual has Parkinson's disease.

29. (Withdrawn) A method of screening for a receptor or receptors for the factor or factors which are obtainable from Type I astrocytes of the ventral mesencephalon and which induce a dopaminergic fate in neural stem or progenitor cells expressing Nurr-1 above basal levels, the method comprising comparing neural stem or progenitor cells with or without expression of Nurr-1 above basal levels within the neural stem or progenitor cells, to identify said receptor or receptors.

30. (Withdrawn) A method as in claim 29 which further comprises isolating and/or purifying and/or cloning said receptor or receptors.

31. (Withdrawn) A method as in claim 30 which further comprises using said receptor or receptors in a method of screening for said factors or factors obtainable from type I astrocytes of the ventral mesencephalon.

32. (Currently Amended) A method of screening for a factor or factors which, either alone or in combination, induce a dopaminergic fate in a neural stem or progenitor cell expressing Nurr1 above basal levels, the method comprising:
(a) bringing Type 1 astrocyte molecules into contact with a neural stem cell or neural progenitor cell expressing Nurr1 above basal levels, which contact allows binding ~~may result in interaction~~ between the Type 1 astrocyte molecules and the neural stem or progenitor cell; and
(b) determining binding ~~interaction~~ between the Type 1 astrocyte molecules and the stem or progenitor cell.

33. (Currently Amended) A method according to claim 32 ~~22~~ which comprises comparing molecules of Type 1 astrocytes of the ventral mesencephalon with those of neural cells which are unable to induce a dopaminergic fate in neural stem or progenitor cells expressing Nurr1 above basal levels.

34. (Original) A method of screening for a factor or factors which, either alone or in combination, induce a dopaminergic fate in a neural stem or progenitor cell expressing Nurr1 above basal levels, the method comprising culturing a neural stem cell or neural progenitor cell expressing Nurr1 above basal levels in the presence of Type 1 astrocyte molecules and analyzing said cell for differentiation to a dopaminergic

phenotype.

35. (Original) A method according to claim 34 which comprises comparing Type 1 astrocytes of the ventral mesencephalon with neural cells which are unable to induce a dopaminergic fate in neural stem or progenitor cells expressing Nurr1 above basal levels.

36. (Withdrawn) A method according to claim 33 which comprises differential expression screening.

37. (Previously Presented) A method according to claim 31 wherein a factor or factors able to induce a dopaminergic fate in a neural stem or progenitor cell expressing Nurr1 above basal levels is or are provided in isolated and/or purified form.

38. (Previously Presented) A method according to claim 31 wherein a factor or factors able to induce a dopaminergic fate in a neural stem or progenitor cell expressing Nurr1 above basal levels is or are formulated into a composition comprising one or more additional components.

39. (Original) A method according to claim 38 wherein the composition comprises a neural stem or progenitor cell expressing Nurr1 above basal levels.

40. (Previously Presented) A method according to claim 38 wherein the composition comprises a pharmaceutically acceptable excipient.

41. (Withdrawn) A method according to claim 40 further comprising administering the composition to an individual.

42. (Withdrawn) A method according to claim 41 wherein the composition is implanted into the brain of the individual.

43. (Withdrawn) A method according to claim 42 wherein the individual has Parkinson's disease.

44-47. (Canceled)

48. (Withdrawn) A method of screening for a substance which modulates the ability of Type 1 astrocytes of the ventral mesencephalon, or a molecule or molecules of such astrocytes, to induce a dopaminergic fate in neural stem or progenitor cells expressing Nurr1 above basal levels, the method comprising:
(i) co-culturing Type 1 astrocytes with neural stem or progenitor cells which express Nurr1 above basal levels in the presence of one or more test substances; or
(ii) bringing neural stem or progenitor cells which express Nurr1 above basal levels into contact with one or more molecules of Type 1 astrocytes able to induce a dopaminergic phenotype in such cells, said contact occurring in the presence of one or more test substances;
and
(iii) analysing the proportion of stem or progenitor cells which adopt a dopaminergic fate;
(iv) comparing the proportion of stem or progenitor cells which adopt a dopaminergic fate with the number of stem or progenitor cells which adopt a dopaminergic fate in comparable reaction medium and conditions in the absence of the test substance(s).

49. (Withdrawn) A method according to claim 48 wherein a

substance which modulates the ability of Type 1 astrocytes of the ventral mesencephalon, or a molecule or molecules of such astrocytes, to induce a dopaminergic fate in neural stem or progenitor cells expressing Nurr1 above basal levels, is provided in isolated and/or purified form.

50. (Withdrawn) A method according to claim 48 wherein a substance which modulates the ability of Type 1 astrocytes of the ventral mesencephalon, or a molecule or molecules thereof, to induce a dopaminergic fate in neural stem or progenitor cells expressing Nurr1 above basal levels, is formulated into a composition comprising one or more additional components.

51. (Withdrawn) A method according to claim 50 wherein the composition comprises a pharmaceutically acceptable excipient.

52. (Withdrawn) A method according to claim 51 further comprising administering the composition to an individual.

53. (Withdrawn) A method according to claim 52 wherein the composition is implanted into the brain of the individual.

54. (Withdrawn) A method according to claim 53 wherein the individual has Parkinson's disease.

55.-57. (Canceled)

58. (Withdrawn) A method according to claim 24 further comprising formulating an agent which improves ability of a dopaminergic neuron to recover from or tolerate a said toxin into a composition comprising one or more additional components.

59. (New) A dopaminergic neuron produced in accordance with claim 4.

60. (New) A composition comprising a dopaminergic neuron according to claim 59.

61. (New) A composition according to claim 60 comprising one or more additional components.